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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/648,961	08/27/2003	Sebastian Bierwirth	TRW(AS)6715	4714
26294	7590	02/17/2006	EXAMINER	
TAROLLI, SUNDHEIM, COVELL & TUMMINO L.L.P. 1300 EAST NINTH STREET, SUITE 1700 CLEVEVLAND, OH 44114			AFZALI, SARANG	
			ART UNIT	PAPER NUMBER
			3729	

DATE MAILED: 02/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/648,961	Applicant(s) BIERWIRTH ET AL.	
	Examiner Sarang Afzali	Art Unit 3729	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 11-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5 is/are rejected.
- 7) ☒ Claim(s) 4 and 6-10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10142003/12092003</u> . | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I (claims 1-10) in the reply filed on 11/15/2005 is acknowledged.
2. Claims 11-13 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Specification

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949).

In the present instance, claim 1, paragraph (e), recites the broad recitation "less than 1 sec", and the claim also recites "preferably less than 0.3 sec" which is a narrower statement of the range/limitation.

Also, claim 3, lines 2-3 recites the broad recitation "a maximum of 2.5 mm", and the claim also recites "preferably a maximum of 2 mm" which is the narrower statement of the range/limitation.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 2 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Al-Amin (US 6,830,264) in view of Toyooka et al. (US 2003/0057695) and Separautzki et al. (US 6,152,351).

As applied to claim 1, Al-Amin teaches (see attachment at end of this office action) a gas generator housing part (container 30, Fig. 2) of a thin-walled tube (main body portion 32, Fig. 2) and a connecting piece (end cap 50, Fig. 2) laterally mounted thereto, characterized by the following steps:

- a) providing a tube (32) having a wall thickness (WS, Fig. 2) which amounts to a maximum of 10% of a tube external diameter (D, Fig. 2);
- b) providing a connecting piece (50) having an external diameter (do) which amounts to between 15% and 40% of said tube external diameter (D);
- c) aligning said connecting piece radially to said tube (32) such that an end face (ef) of said connecting piece faces an outer face (OF) of said tube (32);
- d) joining said tube (32) and said connecting piece (50) by friction welding, by producing a relative rotation between said tube (32) and said connecting piece (50) and moving said tube (32) and said connecting piece (50) towards each other and

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f) providing a friction depth (h) amounting to less than 80% of said wall thickness (WS) of said tube (32).

Al-Amin teaches the claimed invention with the exception of “a minimum tensile strength which amounts to at least approximately 800 N/mm^2 ” and “providing a maximum welding time amounting to less than 1 sec, preferably less than 0.3 sec”.

However, Toyooka et al. teaches a process of secondary forming and heat treating a stainless steel tube to reach a desired tensile strength of 800 MPa (equal to 800 N/mm^2) or higher to provide an automobile structure member with high tensile strength and excellent fatigue resistance (para. [0058], lines 1-7).

Separautzki et al. teach a manufacturing process wherein two metallic alloys are friction welded wherein the overall welding time for the friction welding process is recommended to be less than 1 second (col. 3, lines 32-35).

It would have been obvious to one of ordinary skill in the art at the time of invention, to have provided Al-Amin with a minimum tensile strength as taught by Toyooka et al. and with a maximum welding time as taught by Separautzki et al. in order to provided a member with high tensile strength/excellent fatigue resistance and an effective weld joint.

As applied to claim 2, Al-Amin teaches that tube (32) has a welding surface (Fig. 2), which is not machined before the friction welding process (col. 2, lines 58-60).

As applied to claim 5, Al-Amin teaches that connecting piece (50) has a smaller diameter end on a tube (32) side (Fig. 2).

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8. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Al-Amin (US 6,830,264) in view of Toyooka et al. (US 2003/0057695) and Separautzki et al. (US 6,152,351) and further in view of Katsuda et al. (US 6,406,060). Al-Amin/Totyooka et al./ Separautzki et al. teach the invention cited with the exception of the wall thickness. However, Katsuda et al. teaches a gas generator for an air bag wherein a stainless steel sheet having a thickness of 1.2 to 3.0 mm is formed into a tubular shape to provide a central cylindrical member (16, Fig. 1) of an electric ignition type gas generator (col. 9, 13-19). It would have been obvious to one of ordinary skill in the art at the time of invention, to have provided Al-Amin/Toyooka et al./Separautzki et al. with a tube thickness such as one taught by Katsuda et al. in order to provide an effective material for a gas generator member.

Allowable Subject Matter

9. Claims 4, and 6-10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sarang Afzali whose telephone number is 571-272-8412. The examiner can normally be reached on 7:00-3:30 M-F.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 571-272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SA
1/18/2006


MARC JIMENEZ
PRIMARY EXAMINER
2/16/06